

REMARKS

Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

I. Status of the Claims

Claims 1, 3-7, 16-21, 24-31, 58-65, 68, 69, 73-75, 118, 120, 121, 124-137, 139-151, and 158-164 are pending in this application. Claims 152-157 were withdrawn during prior prosecution. Please note that the cover sheet of the Office Action is incorrect in this respect. In the Office Action mailed on May 19, 2008, claims 1, 3-7, 16-21, 24-31, 58-65, 68, 69, 73-75, 118, 120, 121, 124-135, 137-151 and 158-164 were rejected and claim 136 was objected to as being dependent on a rejected base claim.

Claims 1, 3-7, 16-21, 24-31, 58-65, 68, 69, 73-75, 118, 120, 121 and 124-137, 139-151 and 158-164 remain under prosecution.

II. Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 1, 3-7, 21, 24, 25, 58-64, 68, 69, 73, 74, 121, 124, 129, 139, 140, 141, 142, 143, 149 and 151 under 35 U.S.C. § 103(a) as being obvious over Siebert, United States Patent No. 4,858,556 in view of Moslehi, United States Patent No. 6,051,113, Mahler, United States Patent No. 4,595,483 and Miyoshi, United States Patent No. 6,325,857.

The Examiner rejected claims 16 and 65 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler, Miyoshi and further in view of Ameen, et al., United States Patent No. 6,143,128.

The Examiner rejected claims 17-20 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler, Miyoshi and Ameen, and further in view of Chang, et al., United States Patent No. 6,434,814.

The Examiner rejected claims 26-29, 75, 147, 148 and 150 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler, Miyoshi and further in view of Mitro, et al., United States Patent No. 5,922,179.

The Examiner rejected claim 30 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler and Miyoshi and further in view of Kobayashi, et al., United States Patent No. 5,340,460.

The Examiner rejected claim 31 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler and Miyoshi and further in view of Holland, United States Patent No. 5,311,725.

The Examiner rejected claim 118 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler and Nomura and further in view of Nomura, et al., United States Patent No. 6,641,703.

The Examiner rejected claims 120 and 125-128 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler and Miyoshi and further in view of Chang, et al., United States Patent No. 6,434,814.

The Examiner rejected claims 130-135 and 137 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler and Miyoshi and further in view of Hurwitt, United States Patent No. 3,756,939.

The Examiner rejected claims 144-146 under 35 U.S.C. § 103(a) as being obvious over Siebert in view of Moslehi, Mahler and Miyoshi and further in view of Baldwin, et al., United States Patent No. 6,419,802.

The Examiner rejected claims 158-160 under 35 U.S.C. § 103(a) as being obvious over Moslehi in view of Mitro and Baldwin.

The Examiner rejected claims 161-164 under 35 U.S.C. § 103(a) as being obvious over Moslehi in view of Mitro and Baldwin.

The claimed invention requires that the plasma etching functionality be *isolated* from the other component functionalities of the device. This spatial limitation requires that the highly corrosive etching hardware be separated physically from the other functional devices. This is not taught nor suggested in the prior art. The Siebert reference does identify a shutter which rotates to expose the specimen to the appropriate operative hardware, and which is stated to provide additional substrate protection. However, no further disclosure is made and Fig. 7 merely identifies it as a standalone, line of sight shield between the various operative hardware and the specimen. Moreover, the testing or detection devices of the Siebert reference are still contained within the chamber with the specimen. The shutter is not shown to spatially separate the specimen and plasma etching mechanism from the other operative components. The Examiner relies on a single, nonspecific reference to other devices, “the sources 18 may be any of a number of different types of sources. . .” (col. 12, lines 24-25). This is the Examiner’s basis for linking *three* additional references to arguably find all of the elements of the claimed invention.

KSR International Co. v. Teleflex Inc., --- U.S. ----, 127 S.Ct. 1727, 167 L.Ed.2d 705 (2007) disposes of the heretofore enunciated standard requiring a teaching, suggestion or motivation to combine references, in order to avoid improper hindsight reconstruction. *Id.* at

1742. The TSM standard has not been completely disavowed, however. A flexible TSM standard has been approved by the United States Court of Appeals for the Federal Circuit, following the KSR ruling.

[T]he Supreme Court advised that ‘common sense’ would extend the use of customary knowledge in the obviousness equation: ‘A person of ordinary skill is also a person of ordinary creativity, not an automaton.’ *Id.* Thus, the Supreme Court set aside any ‘rigid’ application of the TSM test and ensured use of customary knowledge as an ingredient in that equation. The Supreme Court observed that this court had also ‘elaborated a broader conception of the TSM test than was applied in [KSR]. *Id.* at 1743. Specifically the Court referred to *DyStar Textilfarben GmbH & Co. v. C.H. Patrick Co.*, wherein this court noted: ‘[o]ur suggestion test is in actuality quite flexible and not only permits, but requires, consideration of common knowledge and common sense.’ 464 F.3d 1356, 1367 (Fed.Cir.2006) (emphasis original). The Court suggested that this formulation would be more consistent with the Supreme Court’s restatement of the TSM test. *KSR Int’l Co.*, 127 S.Ct. at 1739. In any event, as the Supreme Court suggests, a flexible approach to the TSM test prevents hindsight and focuses on evidence before the time of invention, see, e.g., *In re Rouffet*, 149 F.3d 1350, 1357 (Fed.Cir.1998), without unduly constraining the breadth of knowledge available to one of ordinary skill in the art during the obviousness analysis.

In re Translogic Technology, Inc., 504 F.3d 1249, 1260 (Fed.Cir. 2007). Pre-TSM courts utilize standards which are entirely consistent with this formulation. *In re Fine*, 837 F.2d 1071, 1073-75 (Fed.Cir. 1988), states:

To reach a proper conclusion under § 103, the decisionmaker must step backward in time and into the shoes worn by [a person having ordinary skill in the art] when the invention was unknown and just before it was made. In light of all the evidence, the decisionmaker must then determine whether ... the claimed invention as a whole would have been obvious at that time to that person. The answer to that question partakes more of the nature of law than of fact, for it is an ultimate conclusion based on a foundation formed of all the probative facts . . . It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references . . . It is essential that ‘the decisionmaker forget what he or she has been taught at trial about the claimed invention and cast the mind back to the time the invention was made . . . to occupy the mind of one skilled in the art who is presented only with the references, and who is normally guided by the then-accepted wisdom in the art.’ One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention (citations omitted).


In this case, as in *Ortho-McNeil Pharmaceutical, Inc. v. Mylan Laboratories, Inc.*, 520 F.3d 1358 (Fed.Cir. 2008), the references amply support a finding of nonobviousness. “The challenges of this inventive process would have prevented one of ordinary skill in this art from traversing the multiple obstacles to easily produce the invention in light of the evidence available at the time of invention.” *Id.* at 1365. Siebert merely discloses the potential use of other sources. It contains no further disclosure, nor any separation therebetween. Figure 2 identifies the different sputter and ion beam sources as all interchangeable above a rotating shutter. The shutter itself is merely a movable shade to temporarily block the emissions of the source from the specimen. Miyoshi discloses a chamber which is utilized to prepare a reactive material for exposure to the specimen. The chamber is sealed by a movable shutter. The shutter is closed to allow the reactant materials to enter the chamber in a controlled environment. When the reaction has produced the appropriate products, the shutter is opened and the specimen is exposed to the material. The shutter is therefore utilized to encapsulate the reactive materials, not shield the specimen or other fixtures in the chamber. Neither Siebert nor Miyoshi teaches or suggests that a shutter may be utilized to shield different reactive components or fixtures during the use of other source components within a closed vacuum chamber. This is not a case where one element has merely been substituted for another. A rote combination of the teachings of Sieber, Moslehi, Mahler and Miyoshi would not result in the claimed invention. The combination yields more than a predictable result, as required by *United States v. Adams*, 383 U.S. 39, 50-51 (1966), cited with approval by *KSR*. The claimed invention combines the heretofore disparate functionalities of plasma cleaning, etching with plasma and otherwise, and coating are all performed in the same chamber under continuous vacuum. This is especially true of plasma etching, which does not readily combine with other processes. Not only does the combination not yield a predictable

result, the Examiner engages in prohibited hindsight reconstruction of *four* references in order to formulate his rejection. None of these references recognizes the need to isolate the plasma etching function with particularity, nor do they recognize any need for separation of the functions. To stuff all of the identified features in a box does not yield a useful device. Even placing the Miyoshi reaction chamber into a common vacuum chamber would not yield the claimed device, as the device segregates the plasma etching function *while operational with respect to the substrate*, and not as a preparatory step.

CONCLUSION

Based on the foregoing remarks, Applicants respectfully submit that claims 1, 3-7, 16-21, 24-31, 58-65, 68, 69, 73-75, 118, 120, 121, 124-137, 139-151, and 158-164 are in condition for allowance.

Respectfully submitted,

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